

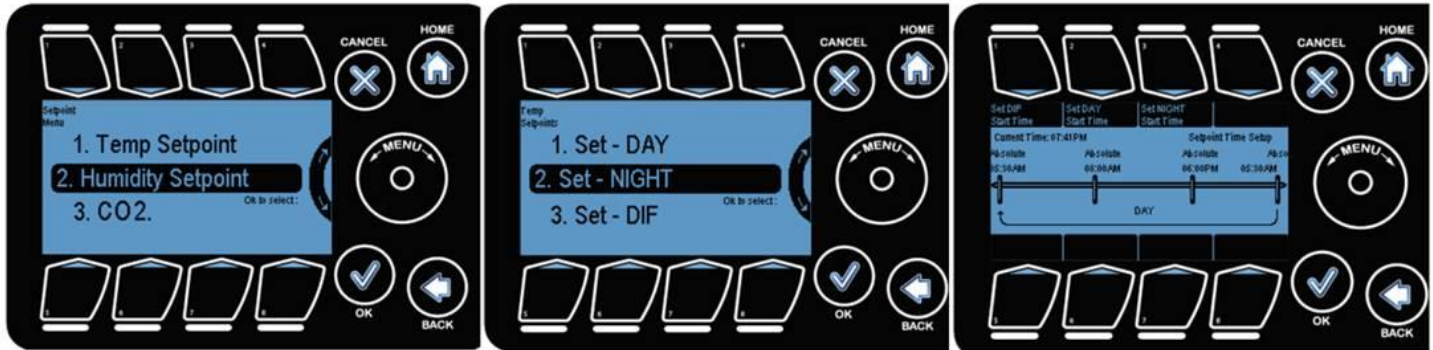
iGrow 800 Quick Setup Guide

SETTING UP SETPOINTS

With the iGrow 800 you can program Temperature, Relative Humidity, and CO2 Setpoints. Please view the following video and necessary steps in setting up your setpoints

iGrow 800 – Setpoint Programming

http://www.youtube.com/watch?v=7JGrg_Q1taQ

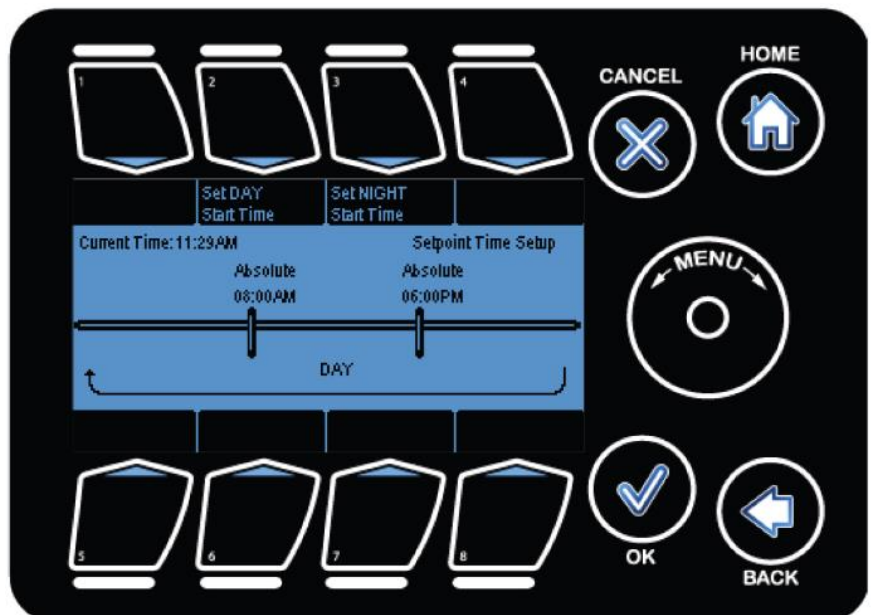


- Cool Setpoint** - if the temperature goes above this threshold it will enter into the cooling stages to bring the temperature back in line within the Normal temperature range (you can have up to 6 cool stages)
- Heat Setpoint** - if the temperature goes below this threshold it will enter into the Heating stages to bring the temperature back in line within the Normal temperature range (you can have up to 2 heat stages)
- Humidify Setpoint** - if the RH reading is below this parameter, the condition is considered too dry, and the system will go into the humidification stage.
- Dehumidify Setpoint** - if the RH reading is above this parameter, the condition is considered too damp, and the system will go into the dehumidification stage.
- CO2 Setpoint** - if the CO2ppm level is below this parameter, the condition will be Low CO2, and the system will start injecting CO2 until it reaches the Setpoint plus Deadband.

There are three options in temperature, humidity and CO2 setpoints

- DAY
- NIGHT
- DIF

DAY is active by default. NIGHT and DIF can be turned on if desired. To turn on a setpoint that is disabled simply highlight Set – Night or Set – DIF hit OK. It will display that the setpoint is currently off. To enable it on press button #5 (turn setpoint on/off) which will then display the night setpoint screen



Deadbands

while cooling or heating equipment may be engaged as soon as the measured temperature falls outside of the normal range, a deadband will prevent the equipment from shutting off when the temperature returns to slightly within the normal range. Deadbands keeps equipment from cycling on and off repeatedly due to small temperature fluctuations. The same concept applies with humidification and dehumidification.

SETTING UP TEMPERATURE CONTROL STAGES

For the iGrow 800 - Here is 2 video links to assist you in temperature control.

iGrow 400/800 Setpoint Programming

http://www.youtube.com/watch?v=7JGrg_Q1taQ

iGrow 400/800 - Setting up your equipment for Temperature & Humidity Stages.

<http://www.youtube.com/watch?v=7CCSDeac5hY>

With the iGrow 800 Controller, you can program a cooling temperature target called a “Cool Setpoint” and a heating temperature target called a “Heat Setpoint”. The temperature range between these two targets is called the “Normal” temperature range or stage.

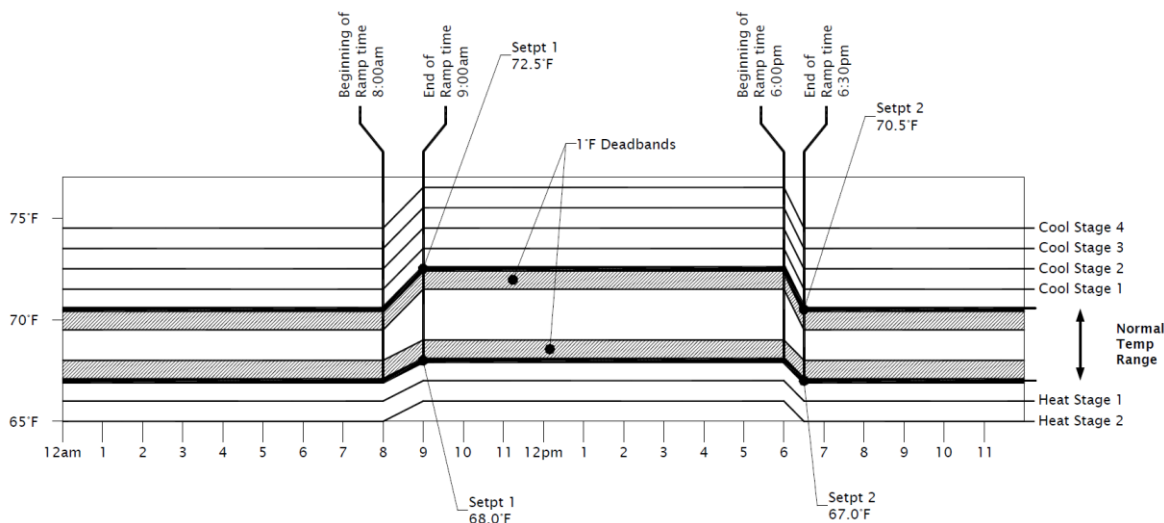
If the greenhouse temperature is within the Normal temperature band usually none of the cooling or heating equipment is on. However, some circulation fans (often called horizontal air flow (HAF) fans) may be active to maintain air movement within the greenhouse environment. Whenever the temperature within the greenhouse moves above the cool setpoint, or below the heat setpoint (falls outside the Normal temperature range) the iGrow 800 will enter cooling or heating stages to bring it back in line. With the iGrow 800 you can program up to six cooling and two heating stages. These stages go from Cool 1 to Cool 6 and Heat 1 to Heat 2. Cool 1 and Heat 1 are the least aggressive with Cool 6 and Heat 2 the most aggressive.

In your program you will determine what equipment you want to be active in each of the stages. When the air temperature in the greenhouse rises above the Cool Setpoint, the system enters the first stage of cooling, referred to as Cool 1. If the temperature continues to rise, the system will enter the second stage, Cool 2, then the third stage, Cool 3 and so forth. At each increasing cooling stage, more cooling will be brought to attempt to bring the air temperature below the cool setpoint and within the target “Normal” temperature range. Heating works the same way.

Here is an example for a Temp Control Strategy, setting up your Day & Night Temperature Setpoints

SET POINTS	START TIME	TEMPERATURE		RAMP TIME	HUMIDITY	
		Low Set Pt. (°F/°C)	High Set Pt. (°F/°C)		Low Set Pt. (%)	High Set Pt. (%)
DAY	6:00 AM	68° F	72° F	30min	55%	80%
NIGHT	6:00 PM	55° F	60° F	60min	45%	70%
DIF	Disabled not using					

And how the setpoints work with stages, ramping and deadbands implemented.



In this example:

Setpoint 1 is set to 9:00am with a 60minute Ramp, Temp is set as 68 to 72.5°F

Setpoint 2 is set to 6:30pm with a 30minute Ramp, Temp is set as 67 to 70.5°F

Here is an example for a Temp Control Strategy, assigning equipment to various Temp Stages

SAMPLE WORKSHEET

OUTPUTS	EQUIPMENT NAME	FOR ON/OFF & VENT ONLY										
		HEAT STAGES			COOLING STAGES						HUMIDIFICATION STAGES	
		H2	H1	N	C1	C2	C3	C4	C5	C6	De-H	Hum
1	RVM-1 ROOF VENT OPEN				20%	40%	60%	80%	99%	99%	15%	
2	RVM-1 ROOF VENT CLOSE											
3	SWM-1 SIDEWALL OPEN				0%	10%	80%	99%	99%	99%	0%	
4	SWM-1 SIDEWALL CLOSE											
5	EX-1 EXHAUST FANS							ON	ON	ON	ON	
6	HAF-1 HAF FANS	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	
7	HT-1 HEAT NORTH	ON	OFF									
8	HT-2 HEAT SOUTH	ON	ON									

SETTING UP HUMIDITY CONTROL STAGES

With the iGrow 800 you can Control Relative Humidity within your Greenhouse Environment.

Note: Relative Humidity staging overrides Temperature staging.

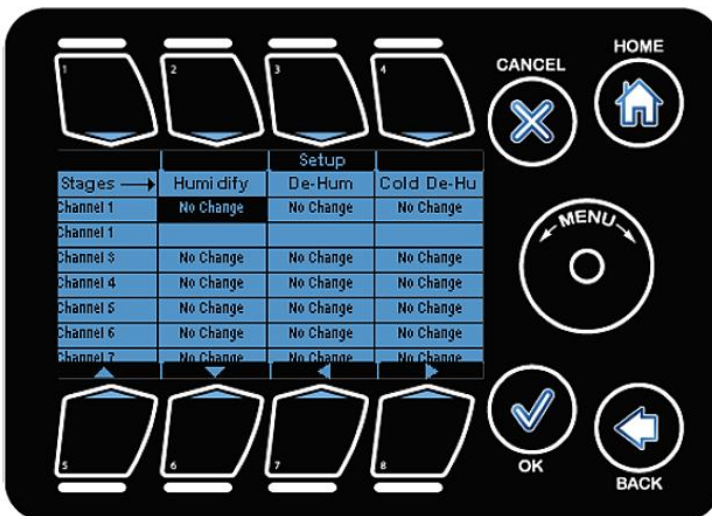
Here is a video link that guides you thru the control process.

iGrow 400/800 Humidification Control Programming

<https://youtu.be/1AqGt8X6htk>

To get to your Humidity staging screen hit OK->4. Stages->2. Humidity Stages

Now in the Humidity Stages Screen you have:



Humidify: is engaged when the humidity is below the Humidify (Low humidity) setpoint.

Dehumidify: is engaged when the humidity goes above the Dehumidify (High Humidity) setpoint.

Cold De-humidify: is engaged when out temp goes below the threshold value set in advanced screen.

The arrows (buttons 5 thru 8) are used for moving the highlight to the desired stage. The Setup and OK buttons are used to select or deselect the highlighted stage for a device. For dual channel devices (vents/curtains), the second channel is disabled as shown.

For Curtains: 0% curtain is uncovered, 99% curtain is covered, No Change: Device doesn't have an affect in that stage.

For Vents: 0% vent is fully closed, 99% vent is fully open, No Change: Device doesn't have an affect in that stage.

For On Off Devices: Override Off: Indicates device is Off in that stage, Override On: Indicates device is on in that stage

No Change: Device doesn't have an affect in that stage.

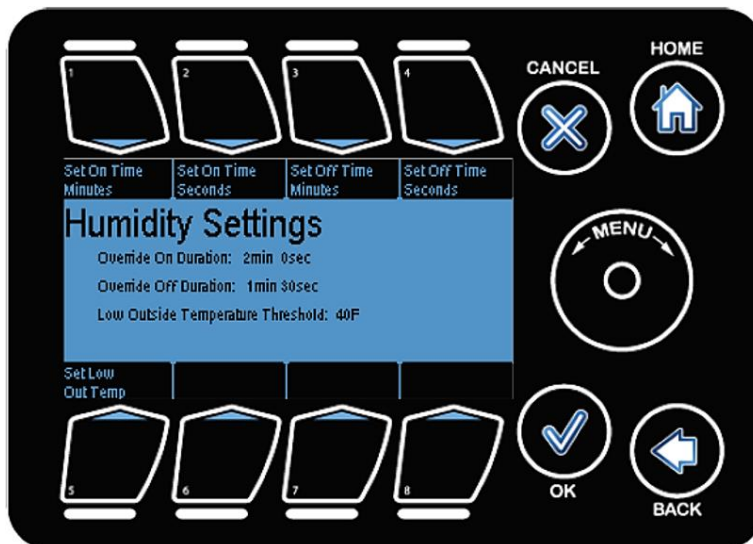
ADVANCE HUMIDITY SETTINGS:

To get to the advance Humidity Settings Screen: from home screen, hit OK->3. System Setup->10. Advance Settings->1. Advance Humidity Settings.

With this screen you have the option of cycling the humidification and dehumidification stages. For example, suppose the zone humidity exceeds the humidity threshold. Without the cycling option, your system will remain in the dehumidification stage until the humidity falls below the dehumidification threshold by at least 2% RH. In some cases it may be impossible to get below your humidity threshold. For these circumstances and for other cases, it would be helpful to cycle in and out of the humidity control override. This screen gives you the capability to do so.

The options are:

1. Set the override ON duration in minutes and seconds
2. Set the override OFF duration in minutes and seconds
3. Set a low temperature threshold.



Override On Duration: Is the time for the override to remain active

Override Off Duration: Is the time for override to remain inactive/off

Buttons #1 - #4 can be used to select override on/off. Wheel can be used to change the values.

LowOutTemp: If temperature falls below this value, override will trigger.

Button #5 is used to select low out temp option. Wheel can be used to change the values.

The LowOutTemp threshold is the outside temperature below which the dehumidification stage will revert to its Cold dehumidification state. For example, you may want to dehumidify but if it's very cold outside, you may want to turn on the heat instead of open a vent and turning on a fan.

Cycling Program if no Humidity Sensor is present: This humidity settings option can be useful in other applications even if you do not have a humidity sensor. For example, you may want to do misting control with a particular output, You can set up a "software" humidity sensor, a humidity time window and threshold so that the cycling will take place during your selected time period.

Also, here is a list of videos, so you can program your controller with confidence, and also have an understanding of what Setpoints are for, Staging of your equipment in Temperature and Humidity Stages, as well as how to Program your equipment.

IGrow 400/800 - **Sensor Setup**

<https://www.youtube.com/watch?v=wzFG-Nm0NcM>

IGrow 400/800 – **Setpoint Programming**

http://www.youtube.com/watch?v=7JGrg_Q1taQ

IGrow 400/800 - **Setting up your equipment for Temperature & Humidity Stages.**

<http://www.youtube.com/watch?v=7CCSDeac5hY>

IGrow 400/800 - **Setting up your equipment ON/OFF Devices**

http://www.youtube.com/watch?v=YIFGSybTd_c

iGrow 800 **Relay Output Design and Understanding**

<https://www.youtube.com/watch?v=czn80AFXXUK>

iGrow 400/800 - Curtain Programming

<https://www.youtube.com/watch?v=oTvHn6hfXW0>

iGrow 400/800 - Equipment Setup (VENTS)

<https://www.youtube.com/watch?v=e7KZbeXkP9w>

iGrow 400/800 Equipment Overriding Video

<https://www.youtube.com/watch?v=gz892PaLuTM>

iGrow 400/800 Sensor Troubleshooting

<https://www.youtube.com/watch?v=KNN4oBqh8Vc>

iGrow 400/800 Save & Restore Configurations

<https://www.youtube.com/watch?v=33682fwe1yc>

iGrow 400/800 Humidification Control Programming

<https://youtu.be/1AqGt8X6htk>

iGrow 400/800 Installing the Link4 Weatherstation

<https://youtu.be/9rjKr0XGVxw>

iGrow 800 Installing the 4 Output Expansion Board

<https://youtu.be/ornz3yRS-vA>

iGrow 800 Programming Expansion Outputs

<https://www.youtube.com/watch?v=OjRvULzwwvk>

LinkConn 100 Software Overview

<https://www.youtube.com/watch?v=2VUD426h6Co>

iGrow 400/800 Connecting with The iGrow Cloud

<https://youtu.be/DobvKzIW56E>

iGrow 400/800 Connecting LinkConn 100 Software

<https://youtu.be/-CR0bpSkwd0>

iGrow 400/800 Networking Multiple Controllers

https://youtu.be/07tg4k-fa_8

iGrow 400/800 Restoring to factory defaults

<https://www.youtube.com/watch?v=50zrFZFCjml>

iGrow 400/800 Series Integrated Panel Overview

<https://www.youtube.com/watch?v=1WSoWC82850>

iGrow 400/800 Installing the DISM Digital Integrated Sensor Module

<https://www.youtube.com/watch?v=GfmoFGw9GwM>

iGrow 400/800 Programming CO2 Control

<https://www.youtube.com/watch?v=2EcWzpcF4Y>

iGrow 800 Setting up Password Protection

<https://www.youtube.com/watch?v=eSG0ORt26g0>

iGrow800 **Connecting Solar Light Sensor**

<https://www.youtube.com/watch?v=C49pp1g-LxM>

iGrow800 **Saving History and USB Logging**

<https://www.youtube.com/watch?v=DQ3xvABTk94>

If you have any more questions or if you need assistance please give us a call at (714) 975-9474 or email us at support@link4Corp.com